

# Water Quality Task Force Tomahawk, WI

July 23, 2019

Lincoln County Land Services Department

Lincoln County Health Department





# Presentation Outline

- Lincoln County resource assessment
- Water resources
- POWTS program overview with recommendations to the task force
- Conservation Department efforts
- Agriculture recommendations to the task force
- Stormwater and erosion control program overview with recommendations to the task force
- Summary



# Lincoln County Resource Assessment

## 2015 Countywide Land Use

<u>Land Use Category</u>	<u>Percent of County</u>
<u>Agriculture</u>	<u>9.12</u>
<u>Commercial</u>	<u>0.19</u>
<u>Cranberry Bog</u>	<u>0.04</u>
<u>Governmental/Institutional</u>	<u>0.14</u>
<u>Industrial</u>	<u>0.28</u>
<u>Open Lands</u>	<u>2.60</u>
<u>Outdoor Recreation</u>	<u>0.15</u>
<u>Residential</u>	<u>2.21</u>
<u>Water</u>	<u>2.99</u>
<u>Woodlands</u>	<u>80.91</u>

Source- Lincoln Co.  
LWRM Plan



# Lincoln County Resource Assessment

## Farm Trends in Lincoln County

	<u>2002</u>	<u>2007</u>	<u>2012</u>
<u>Farms</u>	593	575	449
<u>Farmland (acres)</u>	98,168	86,770	76,844
<u>Average Farm Size (acres)</u>	166	151	171

## Agricultural Trends in Lincoln County (farms)

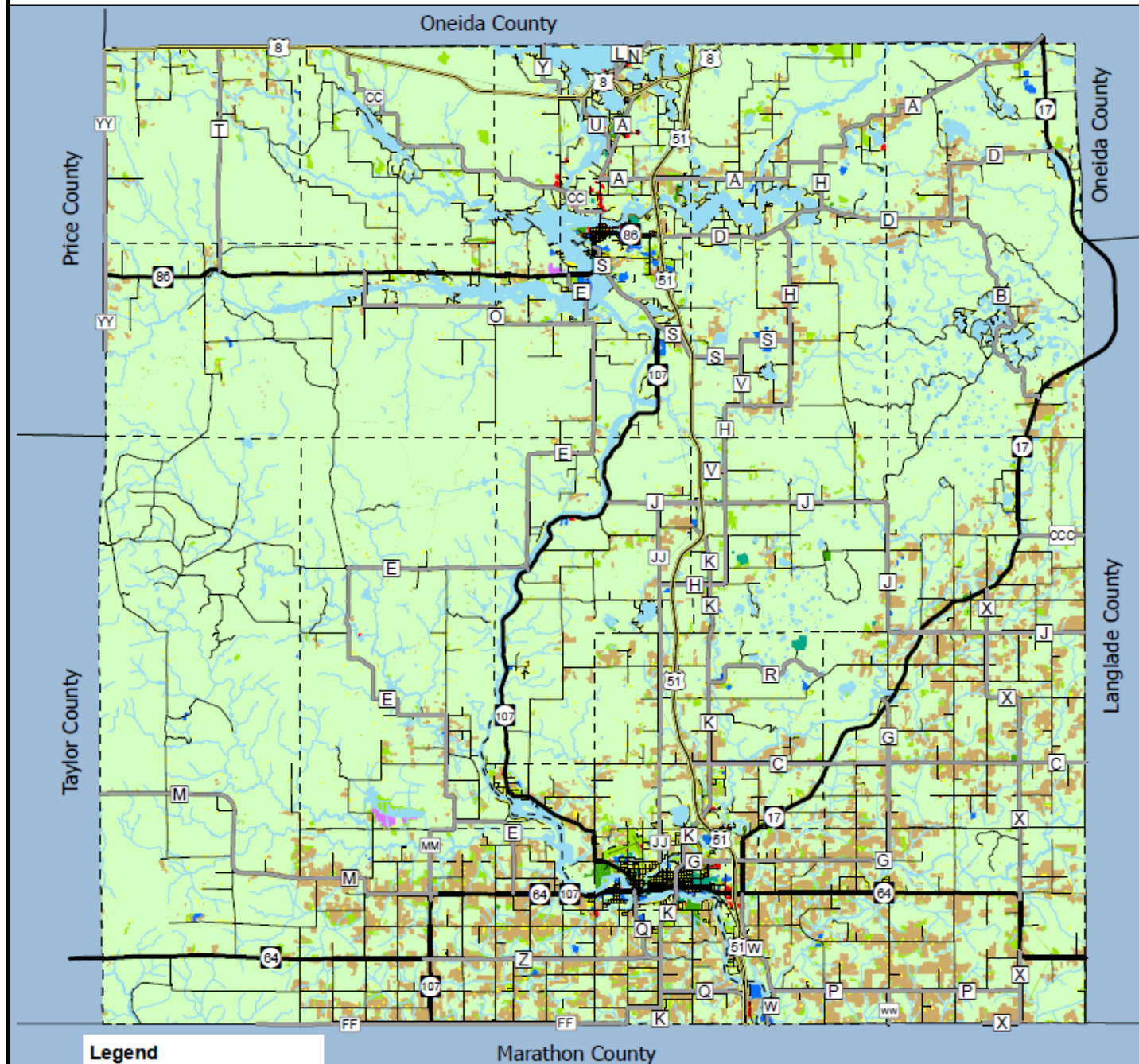
	<u>2002</u>	<u>2007</u>	<u>2012</u>
<u>Dairy</u>	103	69	55
<u>Corn for Grain</u>	65	63	67
<u>Oats for Grain</u>	55	48	37
<u>Cattle and Calves</u>	126	123	124
<u>Forage</u>	363	342	301

Source- Lincoln Co.  
LWRM Plan



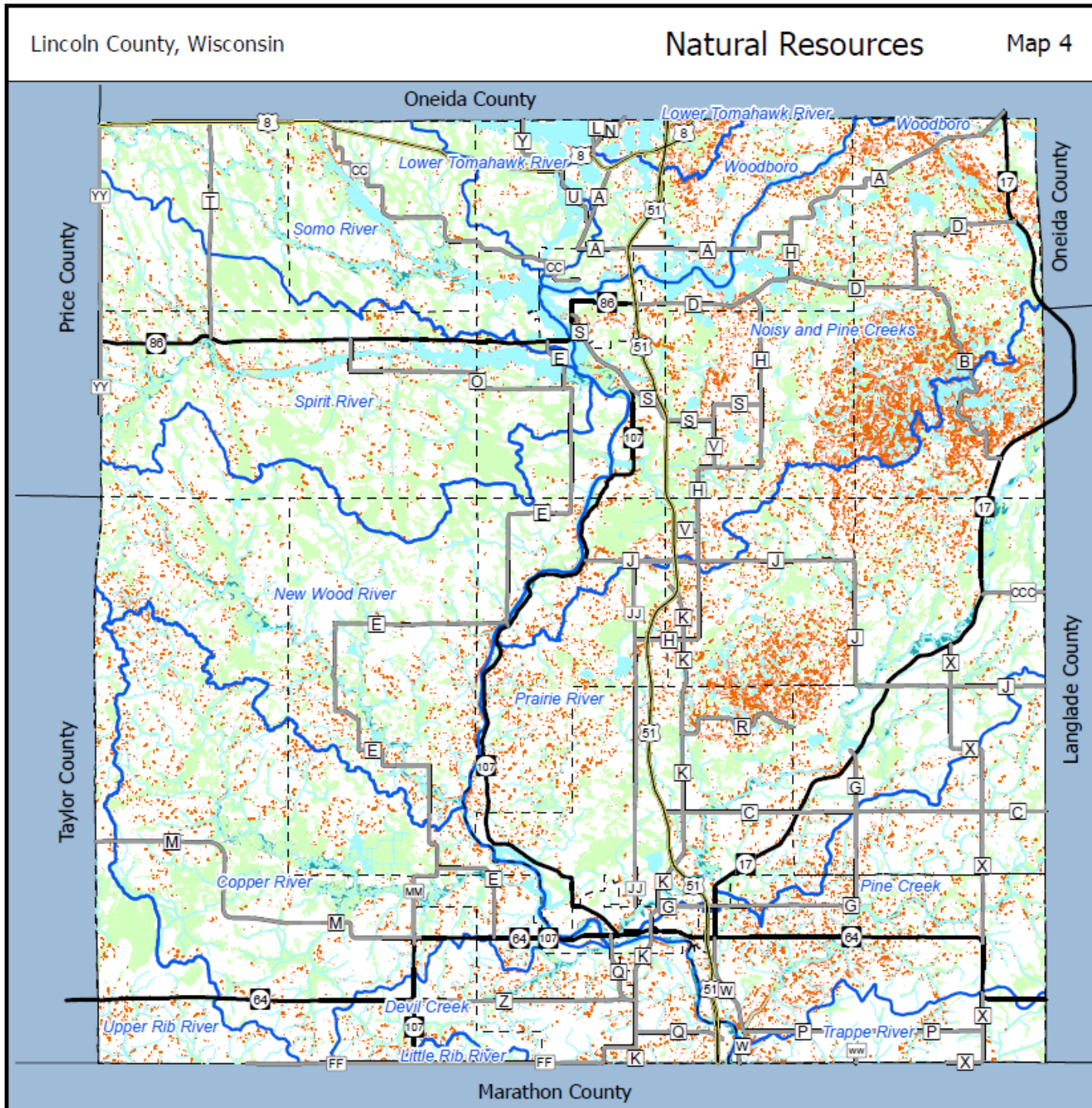
**Legend**

- - - Minor Civil Divisions
- US Highway
- State Highways
- County Highways
- Agriculture
- Commercial
- Cranberry Bog
- Governmental / Institutional
- Industrial
- Multi-Family
- Open Lands
- Outdoor Recreation
- Residential
- Transportation
- Water
- Woodlands



Source- Lincoln Co.  
LWRM Plan





Source- Lincoln Co.  
LWRM Plan





## Water Resources (Surface Water)

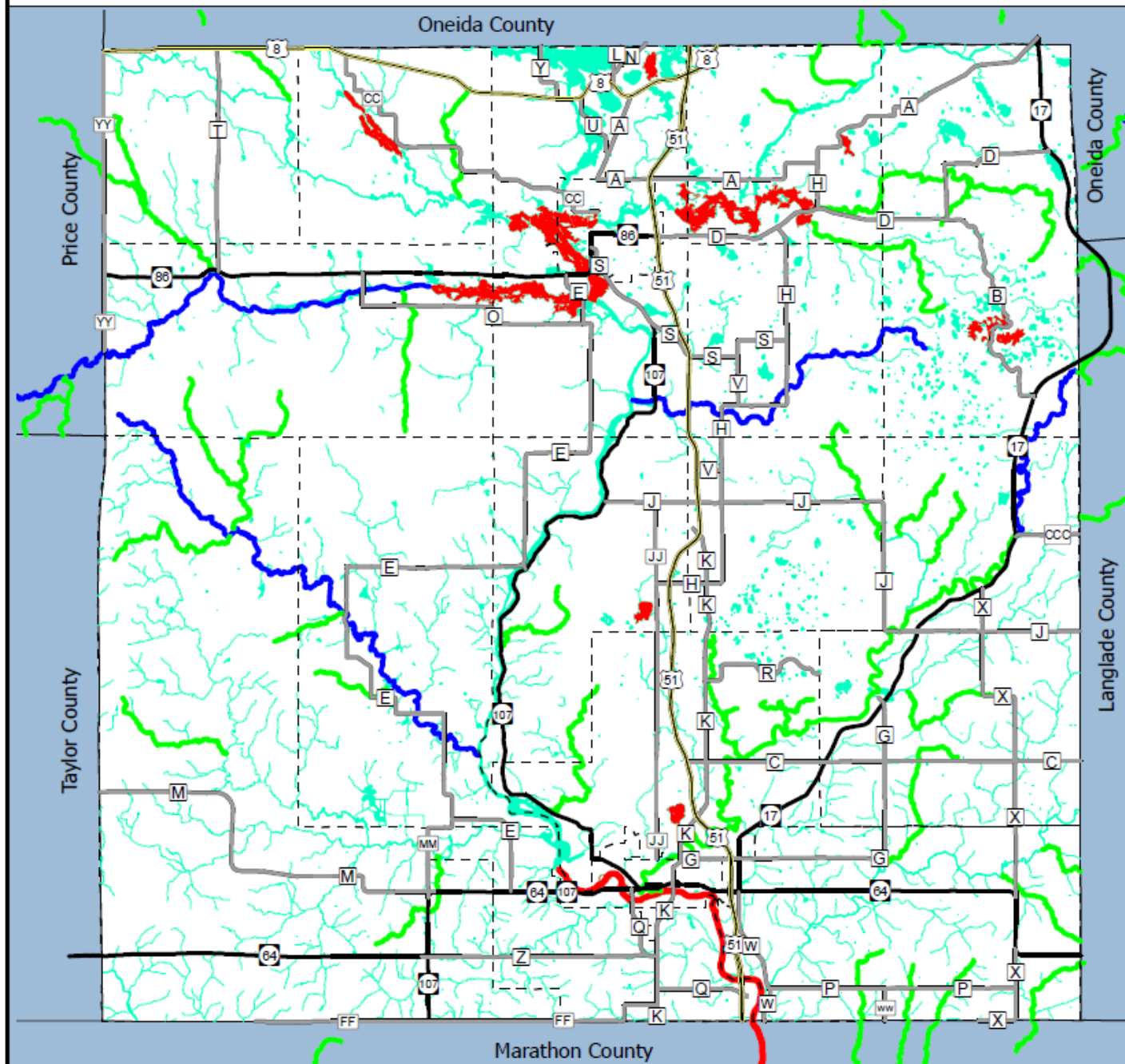
- 152 named lakes and 577 unnamed lakes totaling 15,585 acres
- 121,530 acres of wetland
- 246 rivers/streams totaling 668 miles
  - 395 miles designated as trout streams
    - 3 outstanding waters
    - 39 exceptional waters
- 11 lakes, 1 river on impaired waters list

Source- Lincoln Co.  
LWRM Plan



## Legend

- Minor Civil Divisions
- == US Highway
- == State Highways
- == County Highways
- Water
- 303D
- Exceptional Streams
- Outstanding Streams



Source- Lincoln Co.  
LWRM Plan

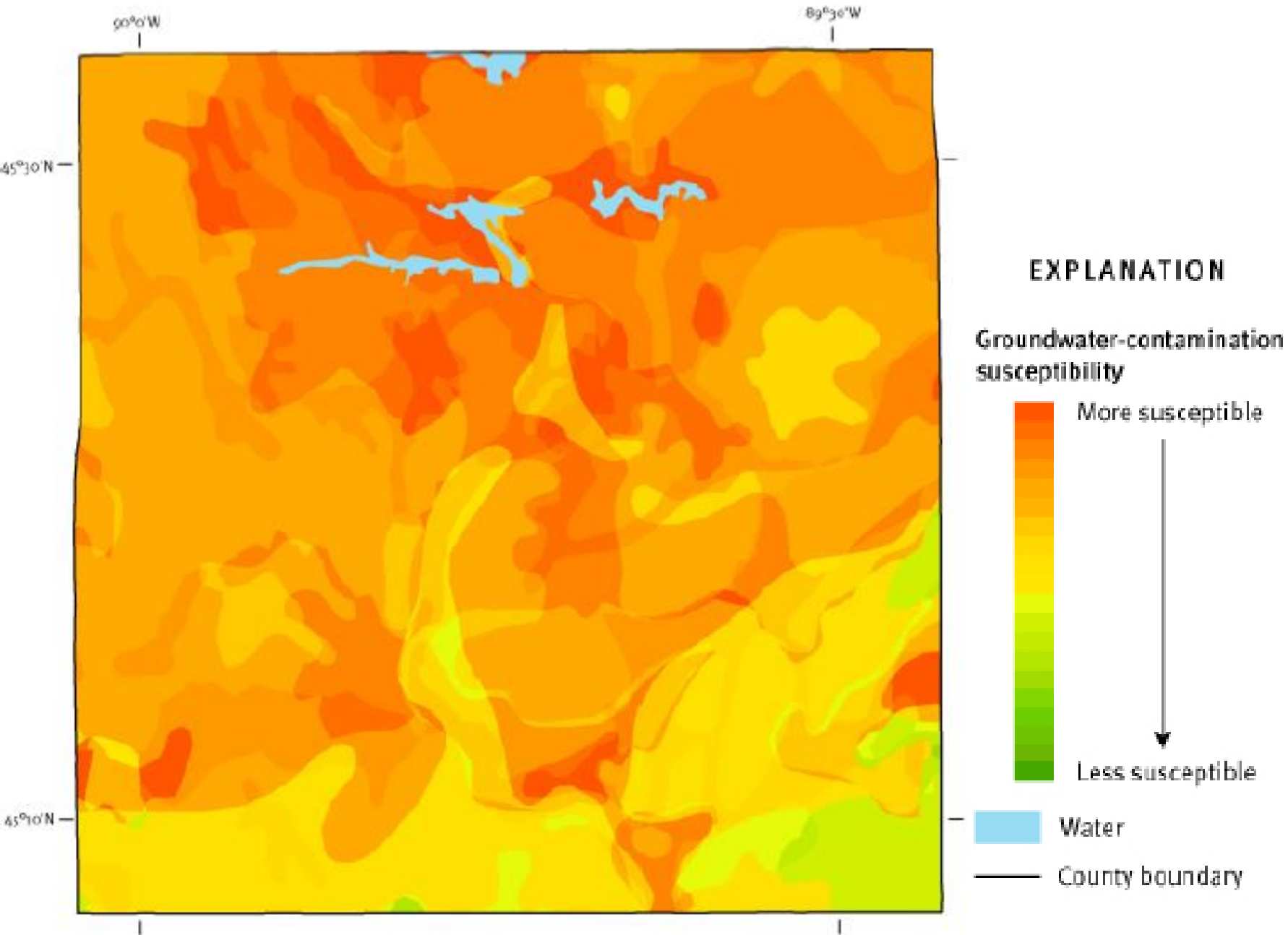


# Water Resources (Ground Water)





# Lincoln County Groundwater Contamination Susceptibility Analysis



Source- Lincoln Co.  
LWRM Plan





## Private and Public Transient Non-Community Water Quality-2015-2018

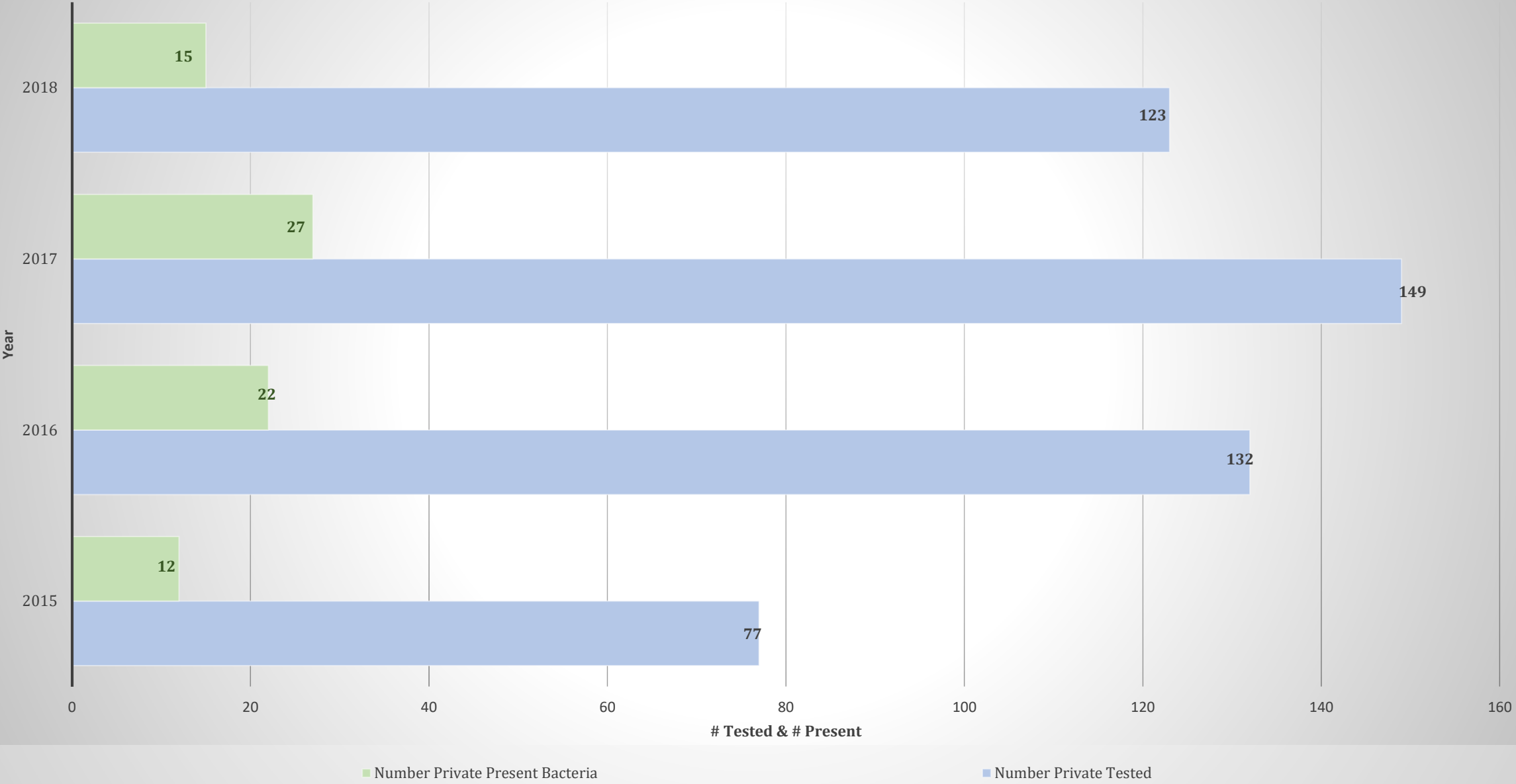
Private Water Nitrates		TNC Water Nitrates	
10.3%	% of private water tests with elevated nitrates. (Total # tested: 58 (n=6/58))	1.9%	% of public water tests with elevated nitrates (Total # tested: 369 (n=7/369))
Private Water Bacteria		TNC Water Bacteria	
15.8%	% of private water tests positive for bacteria (Total # tested: 481 (n=76/481))	6.2%	% of public water tests positive for bacteria (Total # tested: 369 n=23/369)

**Nitrates:** Measured concentrations from active public and or private water systems. **Source:** LCHD **Year of data:** 2015-2018

**Bacteria:** Presents of coliform bacteria in active public and or private water systems. **Source:** LCHD **Year of data:** 2015-2018

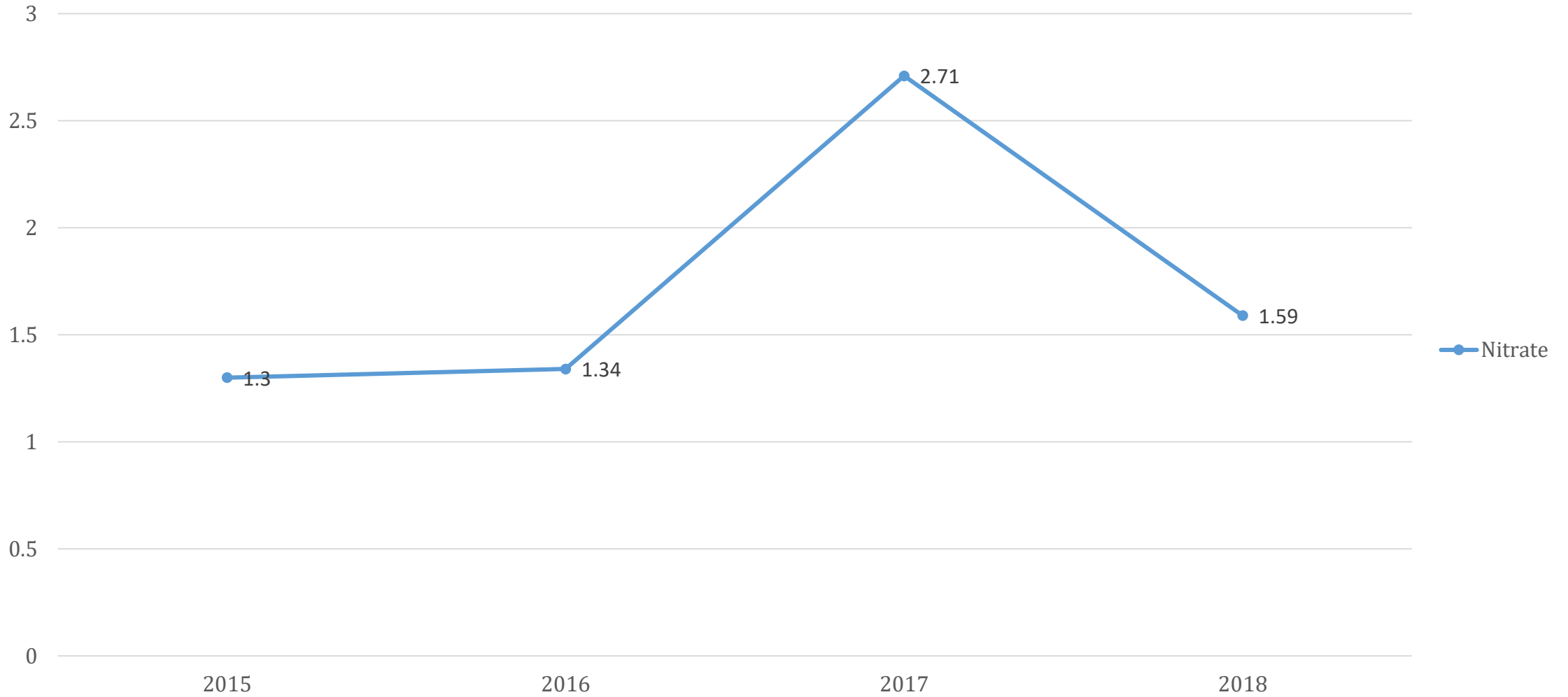


# Number Private Well Water Tests & Results by Year



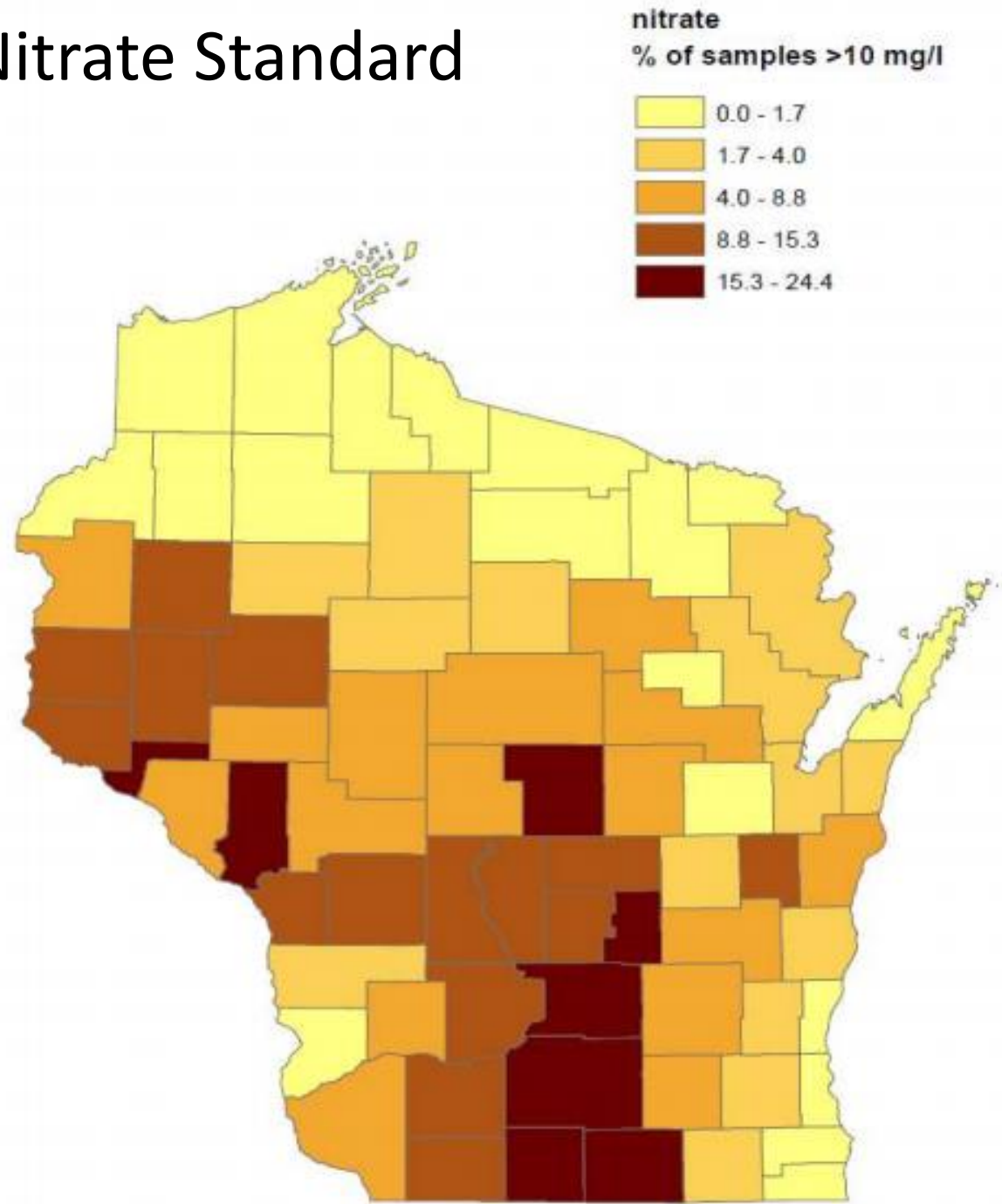


## Nitrate Average of Public Transient Non-Community Water Systems by Year





# Percent of Private Wells Over Nitrate Standard



Source- WDNR



# Private Onsite Waste Treatment Systems (POWTS)

- Promote and Protect Public Health and Safety
- SPS 383 Maintenance Program
- DSPS Wisconsin Fund





The background of the slide is a photograph of a calm lake. On the left side, there is a dense shoreline with various green plants and flowers, including some purple ones. The water is dark blue with gentle ripples. In the far distance, a bridge is visible across the lake, and the sky is a pale blue with some light clouds.

# POWTS Recommendations to the Task Force

1. Enhance POWTS educational efforts for accreditation and require more continuing education to maintain accreditation.
2. Continued state financial investment in Wisconsin Fund program with a reconfigured reimbursement process.



# Conservation Department Efforts

- Agriculture
- Shoreline improvements
- Youth education
- Invasive species

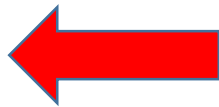






**Before**

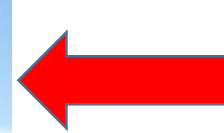
Gully  
Erosion



**After**  
Grassed  
Waterway







**Before**  
Silage Leachate  
Runoff

Silage leachate is liquid that seeps from silage storage structures. It is typically very high in nutrients that can harm surface water and groundwater

**After**  
Silage Leachate  
Collection System





# Agriculture Recommendations to the Task Force

1. Target landowner cost-sharing towards implementing existing agriculture nonpoint pollution performance standards (NR 151), with a goal of statewide compliance



# Agriculture Recommendations 1 Continued

- Minimum conservation expectations originally adopted in 2002
- State law requires 70% (public) cost-sharing for crop and livestock facilities in existence since 2002
- Post 2002 or “new” must meet performance standards w/o cost-sharing
- Counties should and need to monitor compliance status with periodic visits



# Agriculture Recommendation 1 Continued

- In 2000 DATCP and DNR estimated annual implementation cost to be between \$39.5 - \$63.5 million
- In 2019 dollars, that's between \$52.7 and \$84.7 million per year
- Since 2000, additional performance standards have been added, the cost of which were not incorporated in this outdated estimate



# Agriculture Recommendations to the Task Force

2. Provide sustained baseline funding for county land and water conservation staff to provide technical support to implement conservation practices



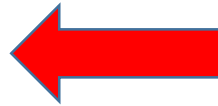
# Agriculture Recommendation 2 Continued

- County conservation departments are the primary way landowners achieve conservation goals, such as agriculture performance standards
- Develop working relationships, and build trust with landowners
- The 2019 state budget fell short of achieving baseline funding of \$12.4 million to fund average of three staff per county (100%, 70%, 50%)





Conventional  
Tillage  
System



No-Till  
System







Conventional row crop system  
V.S.



Managed grazing system



Managed grazing beef operation in  
northern Lincoln County





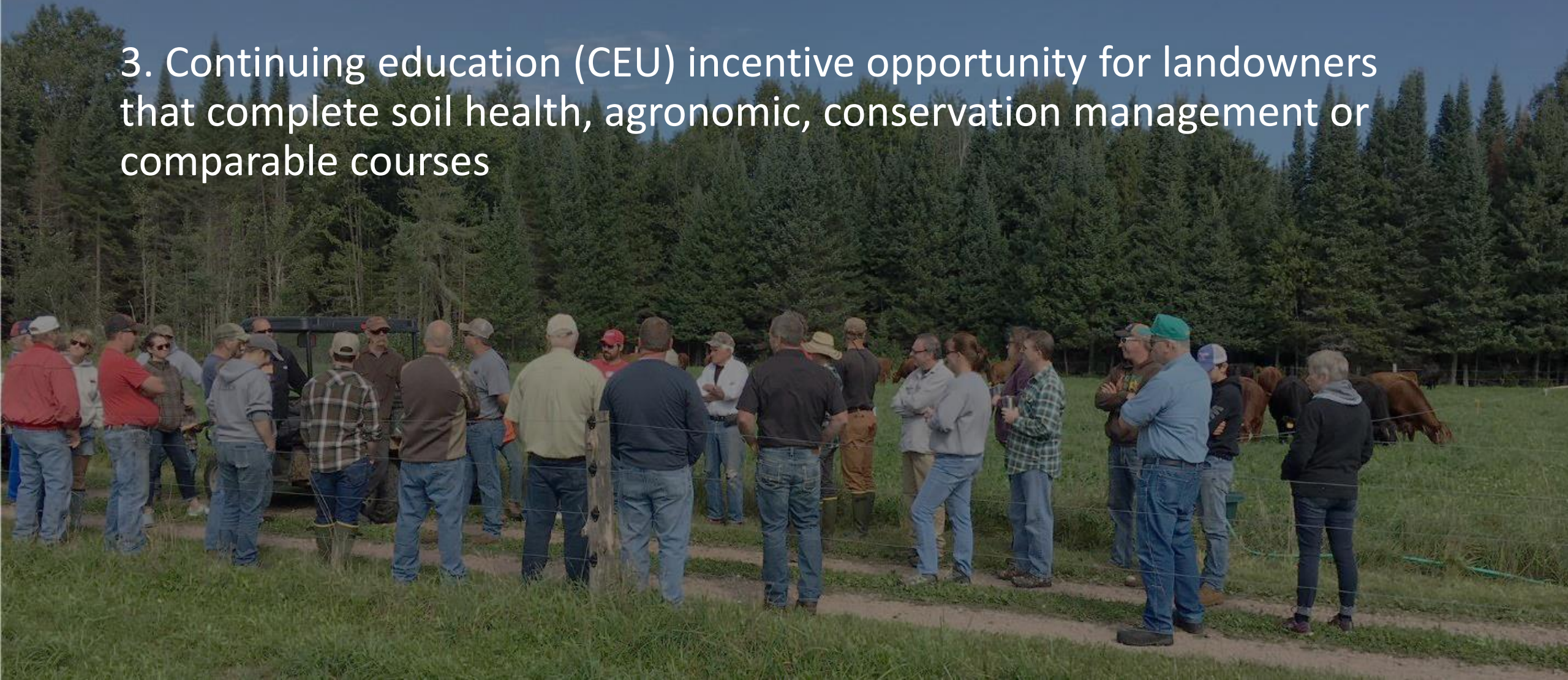
Managed grazing dairy operation in  
southern Lincoln County





# Agriculture Recommendations to the Task Force

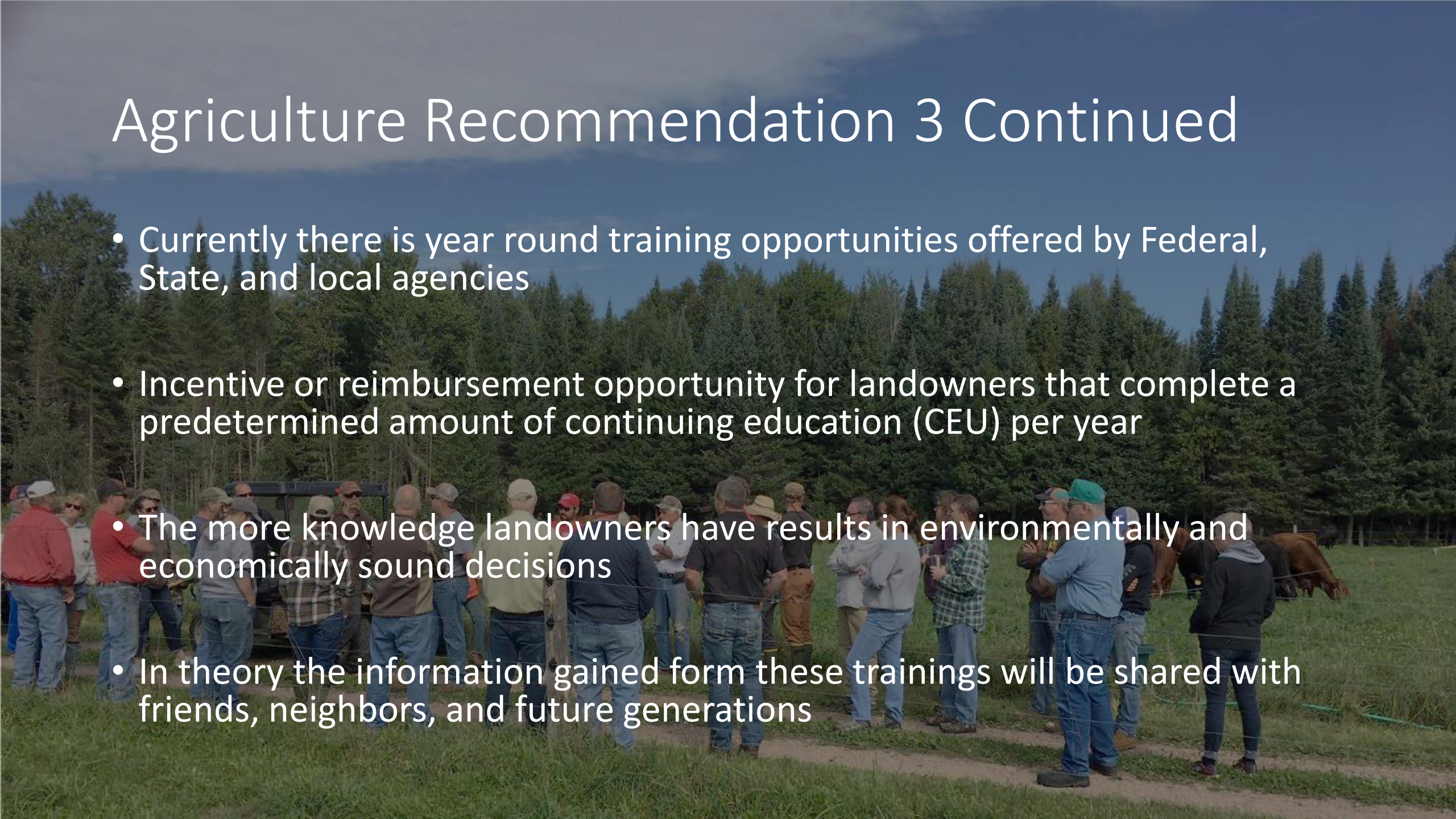
3. Continuing education (CEU) incentive opportunity for landowners that complete soil health, agronomic, conservation management or comparable courses





# Agriculture Recommendation 3 Continued

- Currently there is year round training opportunities offered by Federal, State, and local agencies
- Incentive or reimbursement opportunity for landowners that complete a predetermined amount of continuing education (CEU) per year
- The more knowledge landowners have results in environmentally and economically sound decisions
- In theory the information gained from these trainings will be shared with friends, neighbors, and future generations





# Stormwater and Erosion Control

- Upward trends of lake lot development and urban sprawl
- NR 115 WI Shoreland Protection Program houses the minimum zoning standards for shorelands
- NR 151 subchapter III Non-Agriculture Performance Standards houses minimum standards for non-agriculture facilities and practices
  - Construction
  - Peak Discharge
  - Infiltration
  - Fueling and Vehicle Maintenance
  - Developed Urban Areas
  - Turf and Garden





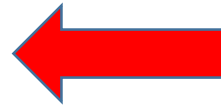
Erosion control feature on the verge of failing





Failing Erosion Control System





**Before**  
Eroding  
Shoreline

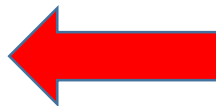
**After**  
Shoreline  
Stabilization







Before



After

During



Shoreline buffer & stormwater  
runoff control system at SARA  
Park, Tomahawk, WI



# Stormwater and Erosion Control Recommendations to the Task Force

1. Analyze water resource conditions (10 years) to see if NR 115 changes are working
2. Provide sustained baseline funding to counties so staff can provide technical support to implement minimum standards (NR 115 & NR 151 subchapter III)
3. Funding for enhanced natural resource and conservation education



# Summary

- Northern WI counties are generally small in population but are diverse with natural resources that need continual protection
- Smaller offices rely on state funding for staffing
- County conservation offices are the direct link in assisting landowners implement conservation practices in all settings
- Fully staffed offices will aid in improving water quality by providing technical and financial assistance to landowner, educating the public, and fostering multi-discipline partnerships



# Thank you

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